

Application No. 10/626,316  
Response to Office Action dated March 7, 2006  
Paper dated September 7, 2006  
Attorney Docket No. 4369-031374

**REMARKS**

Claims 21-29, 33-35, 39 and 40 are pending in this application. Claims 21-29, 33-35, 39 and 40 have been amended. Claims 30-32 and 36-38 have been canceled. No new matter has been added. In view of the foregoing amendments and following remarks, Applicants believe that the rejections should be withdrawn and that all pending claims 21-29, 33-35, 39 and 40 are in condition for allowance.

In the Office Action, acknowledgement is made of Applicants' claim for priority based on Chilean Application No. 1665-2002, filed July 26, 2002. The Examiner indicates that the certified copy of the priority application was not received. Applicants submitted the priority document, along with a Claim for Priority, with the initial application. Copies of the papers as filed, along with a copy of a postcard showing receipt of these papers by the Office, are enclosed.

Claims 21-28 and 37-40 are objected to because the genus and species recited therein are not italicized. Claims 21-28, 39 and 40 have been amended to overcome this objection.

**35 U.S.C. § 112 Rejections**

Claim 23 stands rejected under 35 U.S.C. § 112, first paragraph, for asserted lack of enablement. The Examiner states that the microorganisms "Tr 115" and "Tr 116" need to be obtainable by a repeatable method set forth in the specification or otherwise be readily available to the public.

Applicants respectfully point out that a deposit under the terms of the Budapest Treaty is not applicable with respect to the microorganisms "Tr 115" and "Tr 116" because these microorganisms are native *Trichoderma* species that have not undergone any genetic modifications and were gathered and classified in Chile according to conventional

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taxonomy criteria. Therefore, Applicants submit that these microorganisms are readily available to the public.

Claims 21-24 and 27-28 stand rejected under 35 U.S.C. § 112, first paragraph, for lack of written description. The Examiner asserts that the claims recite compositions comprising fungi selected from any and all *Trichoderma* species but the specification does not contain adequate description for the entire scope of this limitation.

The claimed invention is directed to compositions comprising a combination of two or more live, active *Trichoderma* species that exhibit antagonistic power against a number of phytopathogenic fungi. Applicants point out that it is the combination of two or more *Trichoderma* species, which together exert a synergistic action against phytopathogens, and not the specific type(s) of *Trichoderma* species, which provide the inventive feature of the claimed invention. Therefore, because the general structure of the various *Trichoderma* species is known by those skilled in the art, and the functional characteristics of the *Trichoderma* species with respect to their antagonism of phytopathogenic fungi are fully described in the specification, Applicants respectfully submit that there is more than adequate written description with respect to claims 21-24 and 27-28.

Claims 22, 23 and 25-40 stand rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness. The Examiner makes several assertions, starting at page 6, 1<sup>st</sup> paragraph, which for efficiency are not reiterated herein.

With respect to claim 22, Applicants point out that one skilled in the art would understand that the recitation “natural” refers to a wild-type, genetically unmodified and not artificially created, i.e., created in a laboratory, *Trichoderma* species. Currently, there are over 75 documented species of *Trichoderma* and, to date, their taxonomy still is a problem because their morphology is unclear and remains to be clarified by molecular identification.

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Furthermore, the genus is evolutionarily young and thus still is evolving, having many intermediate forms, with great variability at the inter-species level. Accurate determination of how many species exist will depend on whether the majority of the species in the *Hypocrea* genus represent *Trichoderma* species, in which case there would be more than 100 species of *Trichoderma*. Therefore, it can be concluded that the more than 100 species correspond to species and to variations of species, because they exhibit morphologically different characteristics. With respect to the recitations “fractionated” and “different proportions,” this refers to the different proportions that the *Trichoderma* species may be found in nature.

Claim 23 has been amended to include the recitation “*Trichoderma*” and to correctly spell “*longibrachiatum*.” With respect to the assertion that the recitation “variations” is unclear, Applicants submit that one skilled in the art would understand this recitation to mean variations of the *Trichoderma* species as a result of genetic handling. Finally, claim 23 has been amended to clarify that the five species of *Trichoderma* may be identified by strain names such as T 22 (also referred to as KRL-AG 2 or Rifai), Tr 115 or Tr 116. Additionally, the term “holomorph” has been substituted for “holoform.”

Claim 25 has been amended to correct the spelling of *longibrachiatum* and *harzianum* and to clarify that the composition comprises fungi selected from three live *Trichoderma* species.

Claim 26 has been amended to clarify that the proportions recited therein refer to the three *Trichoderma* species *Trichoderma viridae*, *Trichoderma longibrachiatum* and *Trichoderma harzianum*.

Claim 27 has been amended to recite “bacteriostatic and bactericidal nature,” as suggested by the Examiner.

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Claim 28 has been amended to depend from claim 27, thus providing antecedent basis to “the vegetal extract.”

With respect to claim 29, Applicants point out that in the formulation of latex paint, color may or may not be present. In other words, the lack of the use of pigments in the formulation creates a transparent paint and the addition of pigments constitutes an indicator of painted surfaces.

Claims 30-32 have been canceled, thus obviating this ground of the rejection.

Claim 33 has been amended to depend from claim 21 and further amended to clarify the recitations “volley technique,” “in seed impregnation” and “incorporated to ferti-irrigation tanks, by means of back machines, pulverizing machines and electrostatic machines.”

Claim 34 has been amended to recite that the “composition has an applied dose of 1 kg per hectare, or 2 kg per hectare, per each 600 liters of diluted composition in water.”

Claim 35 has been amended to clarify the preamble of the claim, to provide a method step, and to correct grammatical errors, as suggested by the Examiner.

Claims 36-38 have been canceled, thus obviating this ground of the rejection.

Claim 39 has been amended to correct the spelling of *longibrachiatum* and *harzianum* and to clarify that the composition comprises fungi selected from three live *Trichoderma* species. Claim 40 also has been amended to correct the spelling of *longibrachiatum* and *harzianum*.

### **35 U.S.C. § 102 Rejections**

Claims 21-23, 31, 32, 35 and 36 stand rejected under 35 U.S.C. § 102(b) as being anticipated by McCabe et al. (U.S. Patent No. 4,828,600). Claims 21-23, 31, 32, 35

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and 36 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Paau et al. (U.S. Patent No. 5,194,258) in light of Hermosa et al. (Applied and Environmental Microbiology, 2000, 66(5): 1890-1898) and the ATCC catalog. Claims 21-23, 31, 32, 35 and 36 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Ricard (U.S. Patent No. 4,678,669). Claims 21-24, 31, 32, 35 and 36 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Reinbergen (WO 97/31879).

Applicants respectfully traverse these rejections and request that the rejections be reconsidered and withdrawn.

The claimed invention is directed to a bactericidal, bacteriostatic and fungicidal composition directed against phytopathogenic microorganisms, comprised of a mixture of two or more *Trichoderma* species, which are live and active in any of its vegetative growth phases for application to humans, animals or foods. As such, it is inherent that the two or more live, active *Trichoderma* species mixed together in the composition are capable of existing together without killing off each other but rather exert their bactericidal, bacteriostatic and fungicidal activity directly on the phytopathogenic microorganisms.

McCabe et al. disclose fungal inoculants of *T. hamatum* and *T. harzianum*, in which both of these species are in the form of chlamydospores, i.e., spores, and thus are not alive.

Paau et al. disclose biocontrol agents, such as *Trichoderma* and *Gliocladioum virens*, that are enhanced by being cultured, formulated or co-packaged in the presence of a deactivated pathogen.

Ricard discloses immunizing commensals based on *Scytalidium* species or *Trichoderma* species, in which grain is inoculated with one of the above microorganisms and then the spores of the microorganism are recovered.

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Reinbergen discloses solutions containing microbial spores and/or colonies comprised of adding a microbial spore preparation provided from bacteria, fungi or yeast, in which the fungi are selected from *Trichoderma* species.

Applicants respectfully submit that nowhere do McCabe et al., Paau et al. enlightened by Hermosa et al. and the ATCC catalog, Ricard or Reinbergen teach or suggest the claimed invention which inheres in a mixture of two or more live, active *Trichoderma* species which are able to exist together without killing off each other and at the same time able to have activity directly on phytopathogenic microorganisms.

### **35 U.S.C. 103 Rejections**

Claims 21-23, 31, 32, 35 and 36 stand rejected under 35 U.S.C. § 103(a) as being obvious over McCabe et al. in view of Harman (Plant Disease, 2000, 84(4): 377-393). Claims 21-23 and 31-36 stand rejected under 35 U.S.C. § 103(a) as being obvious over Paau et al., Hermosa et al., and the ATCC catalog in view of Harman. Claims 21-23, 28, 31, 32, 35 and 36 stand rejected under 35 U.S.C. § 103(a) as being obvious over McCabe et al. or Paau et al. or Ricard in view of Panizzi et al. (Journal of Ethnopharmacology, February 2002, 79: 165-168). Claims 21-23, 29-32, 35 and 36 stand rejected under 35 U.S.C. § 103(a) as being obvious over McCabe et al. or Paau et al. or Ricard in view of Howell et al. (Journal of Cotton Science, 1997, 1: 15-20). Claims 21-23, 31, 32, and 35-37 stand rejected under 35 U.S.C. § 103(a) as being obvious over McCabe et al. or Paau et al. or Ricard in view of Toet et al. (U.S. Patent No. 5,330,912) and Yeoh et al. (World Journal of Microbiology and Biotechnology, 1995, 11(6): 678-680). Claims 21-24 and 31-36 stand rejected under 35 U.S.C. § 103(a) as being obvious over Reinbergen in view of Harman. Claims 21-26, 31, 32, 35 and 36 stand rejected under 35 U.S.C. § 103(a) as being obvious over Reinbergen in view of Gromovskykh et al. (Proceedings of 1999 Annual International Research Conference on

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Methyl      Bromide      Alternatives      and      Emissions      Reductions,

<http://www.epa.gov/ozone/mbr/airc/1999/>, last updated June 6, 2002). Claims 21-28, 31, 32, 35 and 36 stand rejected under 35 U.S.C. § 103(a) as being obvious over Reinbergen and Gromovykh et al. as applied to claims 21-26, 31, 32, 35 and 36, and further in view of Panizzi et al. Claims 21-24, 29, 30, 31, 32, 35 and 36 stand rejected under 35 U.S.C. § 103(a) as being obvious over Reinbergen in view of Howell et al. Claims 21-26, 31, 32 and 35-40 stand rejected under 35 U.S.C. § 103(a) as being obvious over Reinbergen and Gromovykh et al. as applied to claims 21-26, 31, 32, 35 and 36 and further in view of Toet et al. and Yeoh et al.

Applicants respectfully traverse these rejections and request that the rejections be reconsidered and withdrawn.

Applicants reiterate that the claimed invention is directed to a bactericidal, bacteriostatic and fungicidal composition directed against phytopathogenic microorganisms, comprised of a mixture of two or more *Trichoderma* species, which are live and active in any of its vegetative growth phases for application to humans, animals or foods. As such, it is inherent that the two or more live, active *Trichoderma* species mixed together in the composition are capable of existing together without killing off each other but rather exert their bactericidal, bacteriostatic and fungicidal activity directly on the phytopathogenic microorganisms.

With respect to Gromovykh et al., this reference discloses testing over 200 *Trichoderma* species to evaluate each of the species competition, antibiosis and parasitism against phytopathogens.

Applicants respectfully submit that McCabe et al.; Paau et al., Hermosa et al. and the ATCC catalog; Ricard, Reinbergen or Gromovykh et al. do not teach or suggest the

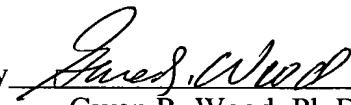
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claimed invention which inheres in a mixture of two or more live, active *Trichoderma* species which are capable of existing together without killing off each other and at the same time able to exert their activity directly on phytopathogenic microorganisms; and the disclosures of Harman, Panizzi et al., Howell et al., Toet et al. and Yeoh et al. do not cure this deficiency.

In view of the foregoing amendments and remarks, it is respectfully submitted that all pending claims 21-29, 33-35, 39 and 40 in the present application comply with the requirements of Section 112 and are distinguishable from the cited prior art. Accordingly, reconsideration and withdrawal of the rejections and an early Notice of Allowance are respectfully requested.

Respectfully submitted,

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